

Patent claims

1. A hydraulically setting composition, characterized in that it contains esters or ester salts, comprising alkoxy groups, of phosphorus-oxygen acids of the general formula (I), (II), (III) or (IV)

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where

- n is an integer from 0 to 10,
- 10 ■ m+k is 2 and m is 1 or 2 and k is 0 or 1,
- at least one of the radicals R¹, R² and optionally R³ is an alkoxy group of the general formula $-(CH_2-CHR^6-O)_lR^7$, where l is from 2 to 30 and R⁶ and R⁷ are each H or CH₃,
- 15 and the radicals R¹ and R², where they are not alkoxy groups, are straight-chain or branched, optionally substituted C₁- to C₆-alkyl groups,
- 20 and R³, where it is not an alkoxy group, is a straight-chain or branched, optionally substituted, C₁- to C₂₀-alkyl group or aryl group,
- R⁴ is H or a straight-chain or branched, optionally substituted C₁- to C₆-alkyl group,
- 25 ■ R⁵ is a divalent, bridging group, and

- M is at least one cation selected from the group consisting of alkali metal, alkaline earth metal or ammonium ions.
2. The hydraulically setting composition as claimed in claim 1, characterized in that n is 0 or 1.
 3. The hydraulically setting composition as claimed in claim 1 or 2, characterized in that k is 1 and m is 1.
 4. The hydraulically setting composition as claimed in any of the preceding claims, characterized in that l has a value of from 3 to 20.
 5. The hydraulically setting composition as claimed in any of the preceding claims, characterized in that R⁶ is H.
 6. The hydraulically setting composition as claimed in any of the preceding claims, characterized in that R⁶ is H.
 7. The hydraulically setting composition as claimed in any of the preceding claims, characterized in that it additionally contains at least one further corrosion inhibitor selected from the group consisting of monoethanolamine, diethanolamine, triethanolamine, N-methylethanolamine, N,N-dimethylethanolamine, N-ethylethanolamine, N,N-diethylethanolamine, N-methyldiethanolamine, 2-hydroxyethyl-ethylenediamine and salts of organic acids thereof.
 8. A surface-modifying agent for structural steel, characterized in that it contains or consists of esters or ester salts, comprising alkoxy groups, of phosphorus-oxygen acids of the general formula (I), (II), (III) or (IV):





where

- n is an integer from 0 to 10,
- m+k is 2 and m is 1 or 2 and k is 0 or 1,
- at least one of the radicals R^1 , R^2 and optionally R^3 is an alkoxy group of the general formula $-[CH_2-CHR^6-O]_lR^7$, where l is from 2 to 30 and R^6 and R^7 are each H or CH_3 ,

and the radicals R^1 and R^2 , where they are not alkoxy groups, are straight-chain or branched, optionally substituted C_1 - to C_6 -alkyl groups,

and R^3 , where it is not an alkoxy group, is a straight-chain or branched, optionally substituted, C_1 - to C_{20} -alkyl group or aryl group,

- R^4 is H or a straight-chain or branched, optionally substituted C_1 - to C_6 -alkyl group,
- R^5 is a divalent, bridging group, and
- M is at least one cation selected from the group consisting of alkali metal, alkaline earth metal or ammonium ions.

9. The surface-modifying agent for structural steel as claimed in claim 8, characterized in that n is 0 or 1.

10. The surface-modifying agent for structural steel as claimed in claim 8 or 9, characterized in that k is 1 and m is 1.

11. The surface-modifying agent for structural steel as claimed in any of claims 8 to 10, characterized in that l has a value of from 3 to 20.
12. The surface-modifying agent for structural steel as claimed in any of
5 claims 8 to 11, characterized in that R^6 is H.
13. The surface-modifying agent for structural steel as claimed in any of claims 8 to 12, characterized in that R^6 is H.
- 10 14. The surface-modifying agent for structural steel as claimed in any of claims of claims 8 to 13, characterized in that it additionally contains at least one further corrosion inhibitor selected from the group consisting of monoethanolamine, diethanolamine, triethanolamine, N-methylethanolamine, N,N-dimethylethanolamine, N-ethylethanolamine,
15 N,N-diethylethanolamine, N-methyldiethanolamine, 2-hydroxyethylethylenediamine and salts of organic acids thereof.
15. A process for the production of steel-containing structures, characterized in that a hydraulically setting composition as claimed in any of claims 1 to
20 7 is mixed with water and the steel is covered or enveloped therewith and hardened.
16. A process for the production of steel-containing structures, characterized in that a surface-modifying agent as claimed in any of claims 8 to 14 is
25 applied to the steel surface and the surface-modified steel is then covered or enveloped with a hydraulically setting composition after mixing thereof with water.
17. A process for renovating reinforced concrete, characterized in that a
30 surface-modifying agent as claimed in any of claims 8 to 14 is applied to the concrete surface.

18. A process for renovating reinforced concrete, characterized in that a surface-modifying agent as claimed in any of claims 8 to 14 is applied to exposed reinforcing steel and then covered again with a repair mortar or concrete.
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19. A process for renovating reinforced concrete, characterized in that a hydraulically setting composition as claimed in any of claims 1 to 7 is applied to exposed reinforcing steel.
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20. The use of a hydraulically setting composition as claimed in any of claims 1 to 7 for protecting reinforced concrete.
21. The use of a surface-modifying agent as claimed in any of claims 8 to 14 for protecting reinforced concrete.
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22. A process for the preparation of a hydraulically setting composition as claimed in any of claims 1 to 7, characterized in that esters or ester salts, comprising alkoxy groups, of phosphorus oxygen acids is added to the dry binder, mortar or concrete or to the binder, mortar or concrete mixed with water, in the factory, on the building site, in the mixer or in the delivery pump, or is added directly to the mix via a static mixer having a powder metering device or liquid metering device.
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